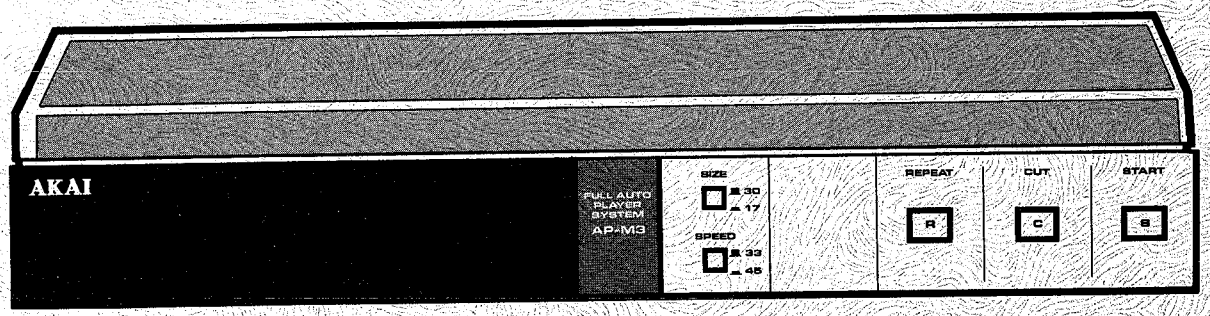
AKAI SERVICE MANUAL



FULL AUTO TURNTABLE

MODEL **AP-M3/S**

FULL AUTO TURNTABLE

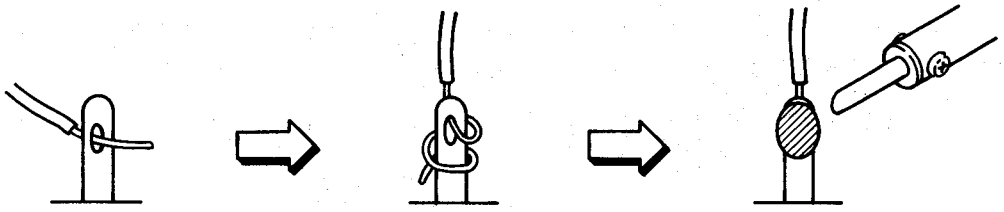
MODEL AP-M3/S

SAFETY CHECK AFTER SERVICING

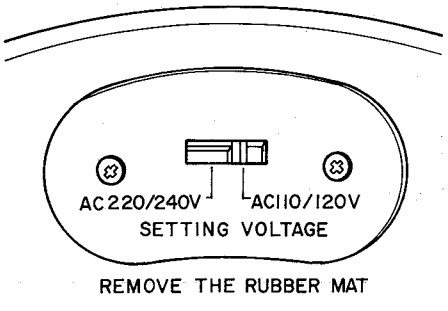
Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 Mohms, but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for [C] or [A], specified insulation resistance should be more than 2.2 Mohms (ground terminals, microphone jacks, headphone jacks. line-in-out jacks etc.)

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ symbol parts are critical for safety.
   Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.
10. Voltage Conversion
    Models for Japan, USA, Europe, UK, and Australia are not equipped with this facility. Each machine is preset at the factory according to destination, but some machines can be set to 110V/120V or 220V/240V as required, if your machine's voltage can be converted:
    1) Disconnect the AC cord.
    2) Move the voltage selector located on the cabinet, under the platter, with a screwdriver so that the marker is below the voltage for your area.



SECTION 1

SERVICE MANUAL

TABLE OF CONTENTS

For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I. SPECIFICATIONS

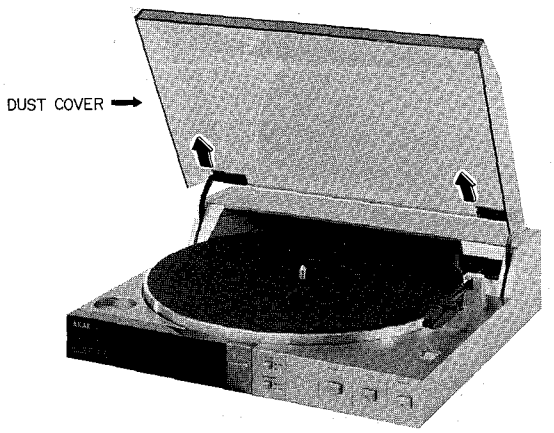
TURNTABLE (PLATTER)	300 mm Aluminum Alloy Diecast
DRIVE SYSTEM	DC Servo Belt Drive Full Automatic
MOTOR	DC Servo Motor
SPEED	33-1/3 & 45 rpm
WOW & FLUTTER	0.06% (W. RMS)
RUMBLE	70 dB (DIN-B)
TONEARM	Static Balanced Straight Type
EFFECTIVE ARM LENGTH	200 mm
STYLUS PRESSURE	2.2 g (Fixed)
ARM LIFTER	Oil Damped
OVER HANG	10 mm (Fixed)
CARTRIDGE OUTPUT VOLTAGE CHANNEL SEPARATION	Induced Magnet Type (Replacement Stylus RS-3) 5 mV (DIN) 20 dB
POWER REQUIREMENTS	100V, 50/60 Hz for Japan 120V, 60 Hz for USA & Canada 220V, 50 Hz for Europe except UK 240V, 50 Hz for UK & Australia 110–120V/220–240V, 50/60 Hz switchable for other countries
POWER CONSUMPTION	3W
DIMENSIONS	350 (W) x 91 (H) x 322 (D) mm (13.8 x 3.6 x 12.7 inches)
WEIGHT	3.5 kg (7.7 lbs)

*** For improvement purposes, design and specifications are subject to change without notice.**

II. DISMANTLING OF UNIT

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

1



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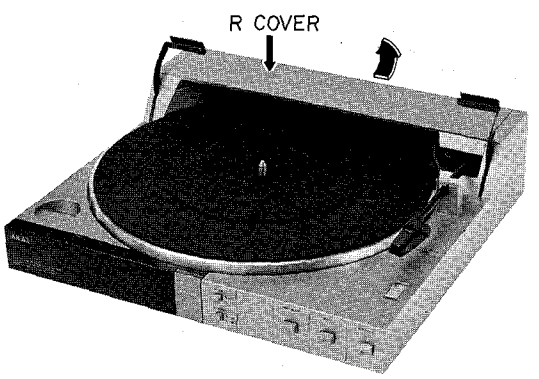

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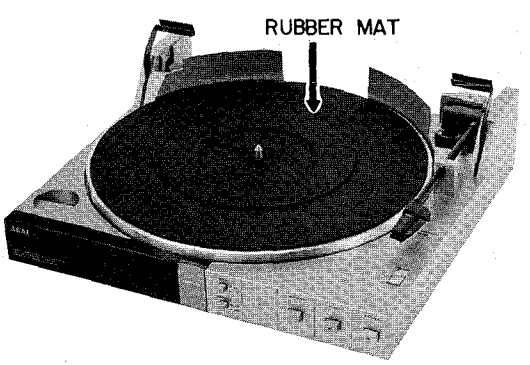

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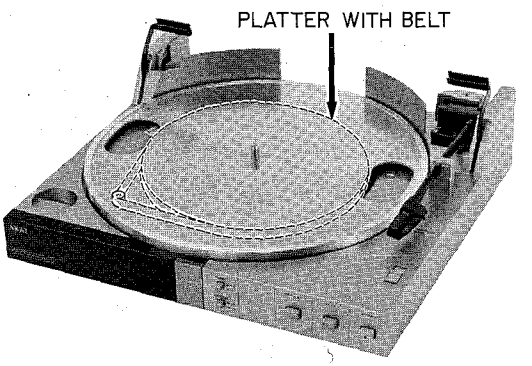

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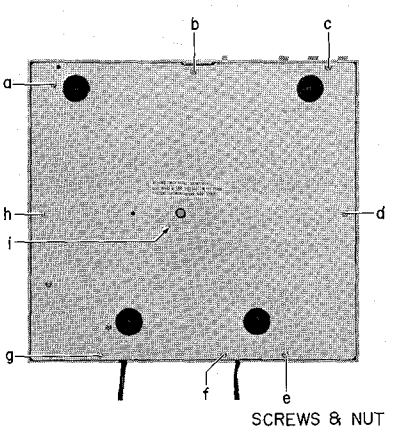

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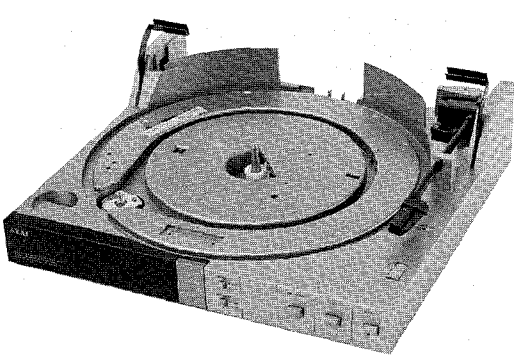
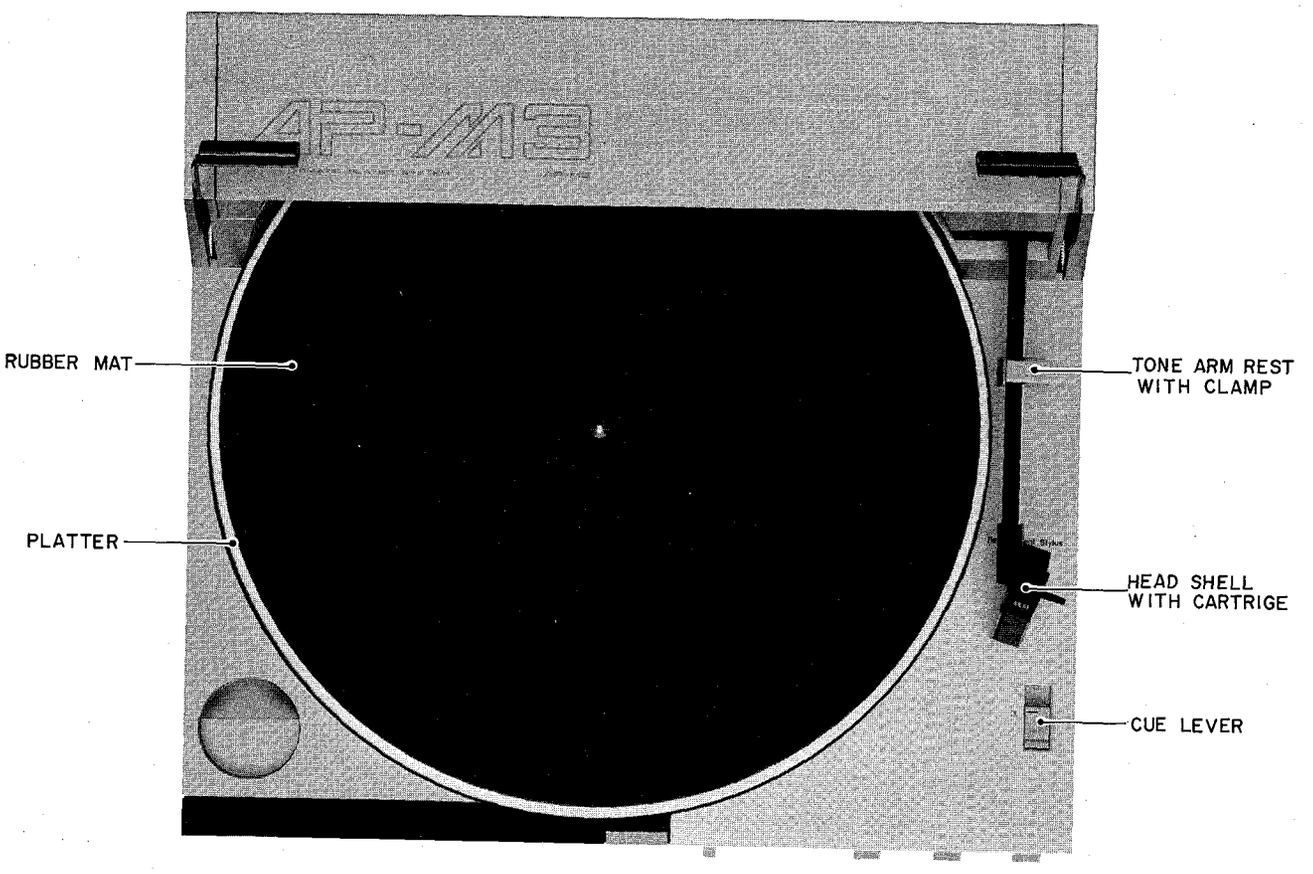


III. CONTROLS



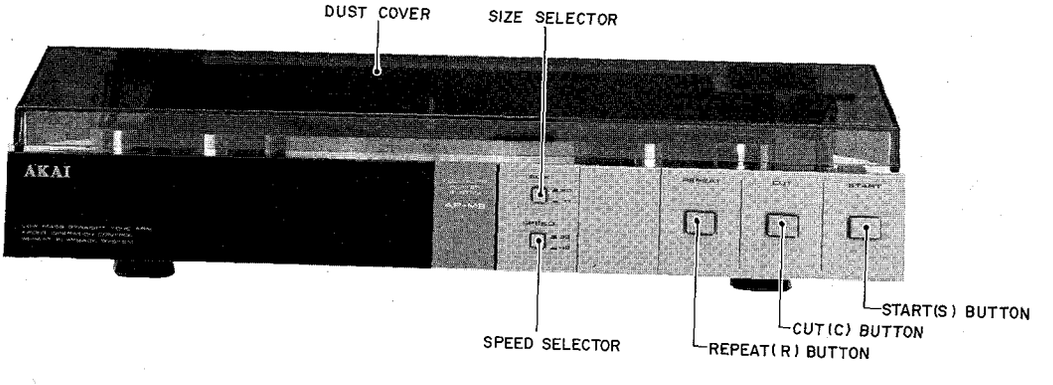


Fig. 3-1 Controls

IV. PRINCIPAL PARTS LOCATION

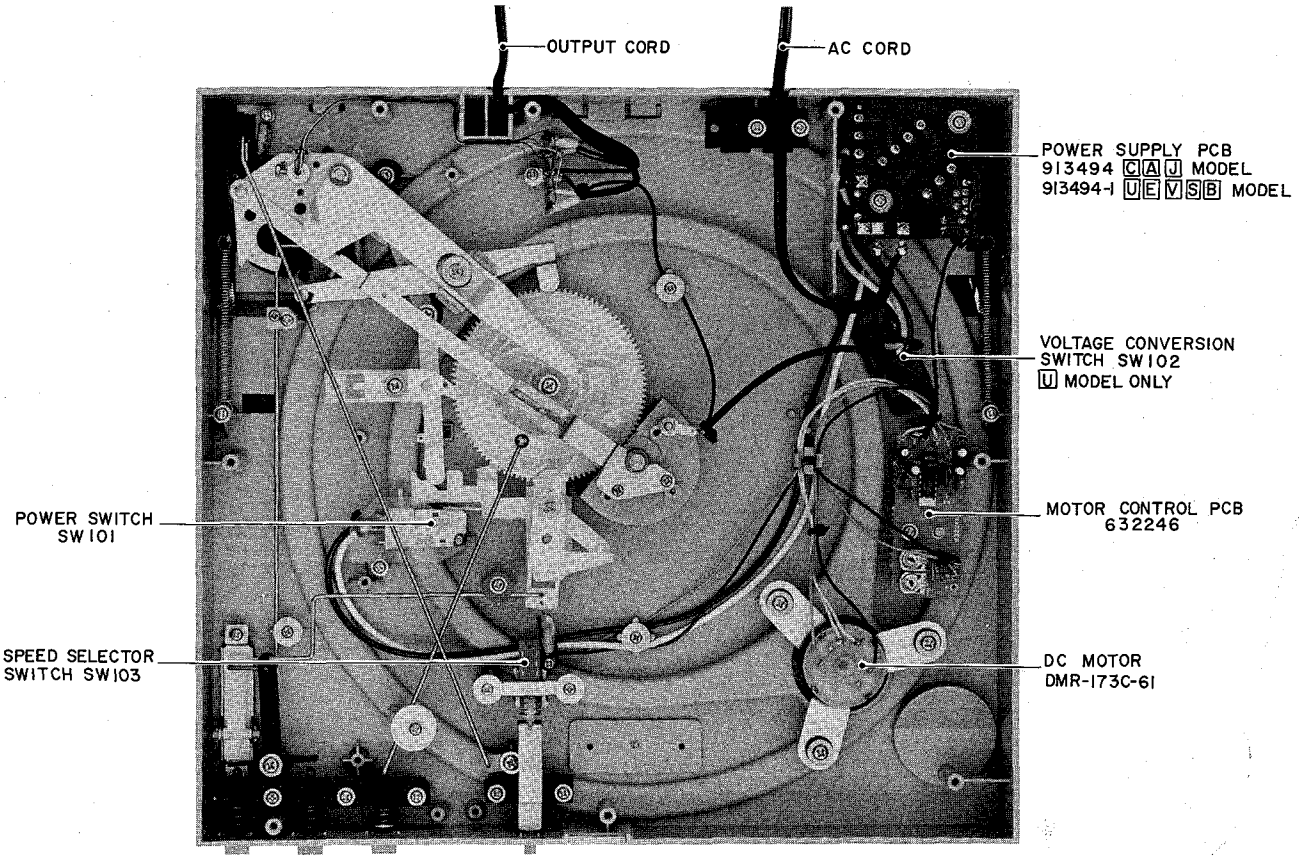


Fig. 4-1 Principal Parts Location

V. ADJUSTMENT

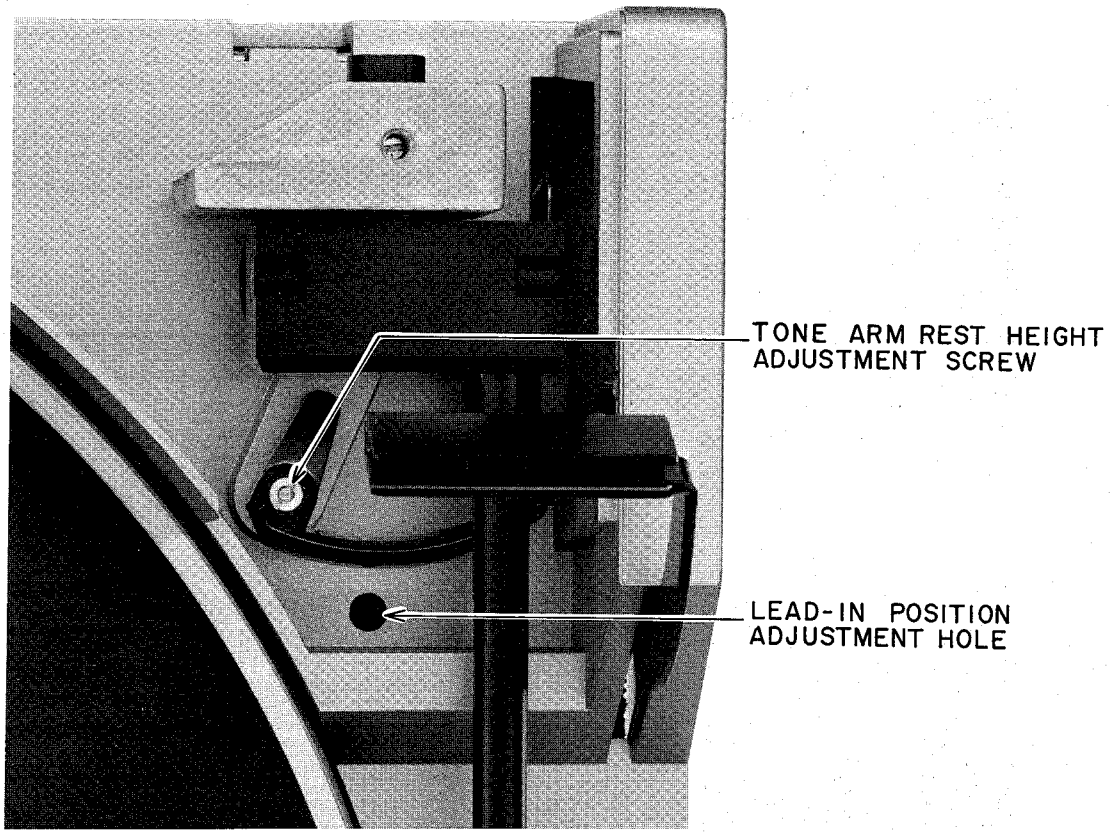


Fig. 5-1 Tone Arm Adjustment Points

5-1 LEAD-IN POSITION ADJUSTMENT

a) Disconnect the AC cord.
b) Remove the dust cover and the R cover.
c) Place a record on the platter. (Use a 30 cm record).
d) Turn the platter clockwise by hand and push the start button.
e) Stop turning the platter, when tone arm is moved to lead-in area.
f) Adjust the lead-in position adjustment screw (see Fig. 5-1), until the stylus descends at the lead-in groove of a record.

Clockwise:	To make the stylus descend towards the spindle.
Counterclockwise:	To make the stylus descend away from the spindle.

5-2 TONE ARM REST HEIGHT ADJUSTMENT

a) With tone arm in the up-position, the stylus should be 4 to 7 mm above the surface of the record. Turn the adjustment screw (see Fig. 5-1) to change the height.

Clockwise:	Down
Counterclockwise:	Up

5-3 SPEED ADJUSTMENT

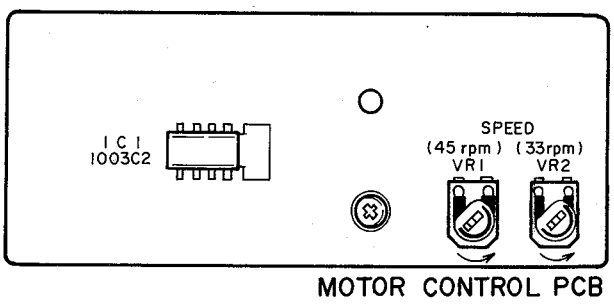
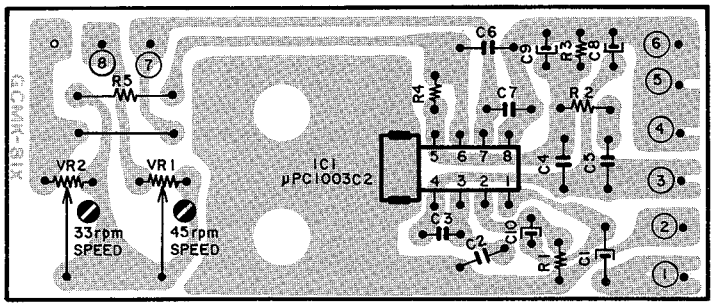


Fig. 5-2 Speed Adjustment Points

a) Set the speed selector to 33-1/3 rpm.
b) Playback the test record (33-1/3 rpm, 1,000 Hz).
c) Adjust VR2 (50 kg) so that the speed is 1,000 ± 5 Hz.
d) Set the speed selector to 45 rpm.
e) Playback the test record (45 rpm, 1,000 Hz).
f) Adjust VR1 (50 KB), so that the speed is 1,000 ± 5 Hz.

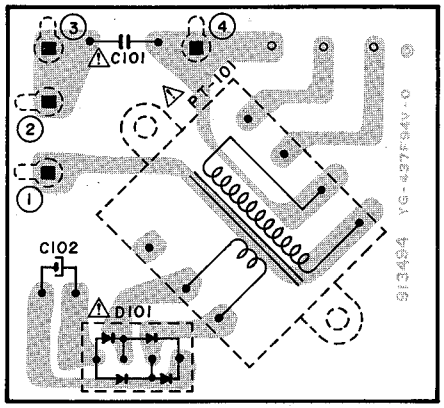
VI. CLASSIFICATION OF VARIOUS P.C BOARDS

P.C Board title	P.C Board Number	
Motor Control P.C Board	632246	All Models
Power Supply P.C Board	913494 913494-1	C, A, J Model U, E, V, B, S Model



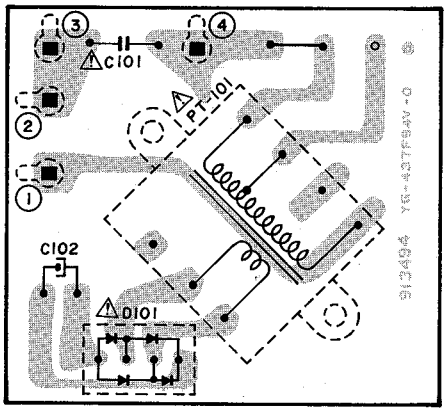
MOTOR CONTROL PCB 632246

C,A,J MODEL



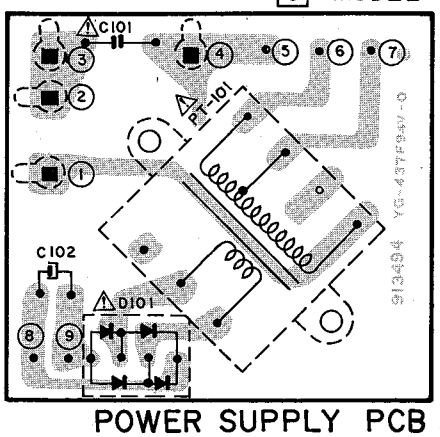
POWER SUPPLY PCB
913494

E,V,B,S MODEL



POWER SUPPLY PCB
913494-1

U MODEL



POWER SUPPLY PCB
913494-1

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

SECTION 2

PARTS LIST

TABLE OF CONTENTS

Resistor and Capacitor which is not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.

ATTENTION

1. When placing an order for parts, be sure to list the parts no. model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Parts List may be partially changed, please use this parts list for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List shows the parts that are considered necessary for repairs. Other parts, such as resistors and capacitors, are shown in the "Common List for Service Parts". Select and order such parts from the "Common List for Service Parts".
2. The Recommended Spare Parts shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not be supplied in principle.
4. How to read list

a) Mechanism Block

2. HEAD BASE BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1x	BH-T2023A320A	HEAD BASE BLOCK GX-F66R
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20x03STL CMT
2-4	ZS-536488	BID20x08STL CMT
2-5	ZG-402895	CS ANGLE ADJUST SPRING

SP (Service Parts) Classification

A small "x" indicates the inability to show that particular part in the Photo or Illustration.

This number corresponds with the individual parts index number in that figure

This number corresponds with the Figure Number

b) P.C Board Block

6. SYS. CON. P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-1	BA-T2034A070A	PC SYS CON BLK GX-F44R
6-IC1	EI-324536	IC HD14049BP
6-IC2	EI-336801	IC MB8841-564M
6-IC3	EI-331661	IC SN7405N
6-IC4	EI-336725	IC M54527P
6-TR1to4	ET-200985	TR 2SC2603 F,G
6-TR5to28	ET-554657	TR 2SA733A P,Q
6-D1	ED-318292	D SILICON H 1S2473T-77 T26
6-D2to4	ED-308952	D GERMA V 1K34A-LR F07
6-D5to10	ED-318292	D SILICON H 1S2473T-77 T26
6-X1	EI-318384	OSC X'TAL NC-18C 3.579545MHZ

SP (Service Parts) Classification

This reference numbers corresponds with symbol numbers of Schematic Diagrams.

5. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List. It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index.

WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT

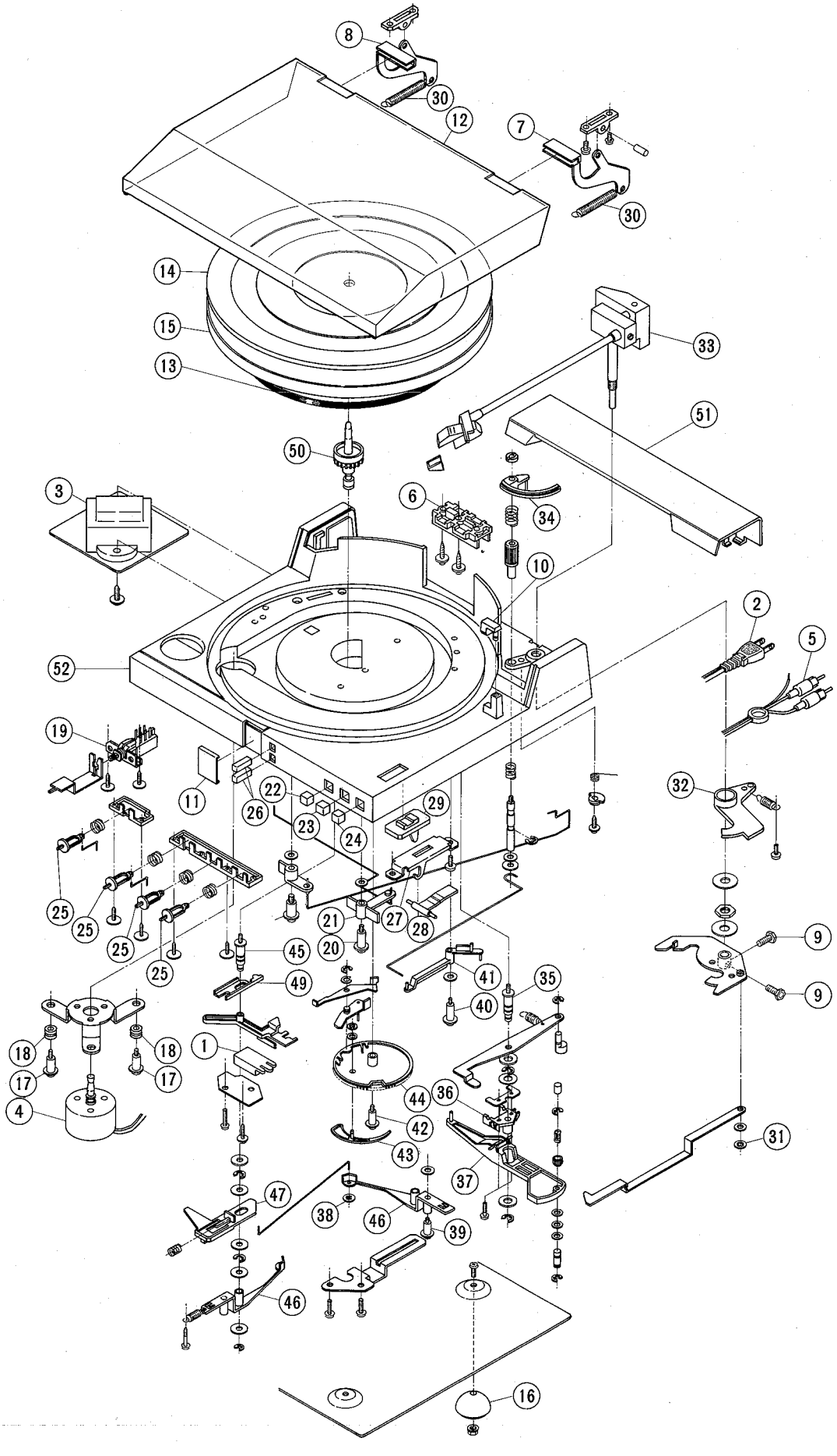
⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

RECOMMENDED SPARE PARTS

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

NO.	PARTS NO.	DESCRIPTION
1	BM-710569	MOTOR BLK DMR-173C-61 (M101)
2	BT-710565	⚠ TRANS POWER AP-M3 (U) (PT101) (U,E,V,B,S)
3	BT-710566	⚠ TRANS POWER AP-M3 (J) (PT101)
4	BT-710567	⚠ TRANS POWER AP-M3 (C) (PT101)
5	BT-710568	⚠ TRANS POWER AP-M3 (A) (PT101)
6	ED-284095	⚠ D SILICON SIVB10 100/0.6A (D101)
7	EI-710532	IC μPC1003C2 (IC1)
8	ES-706464	⚠ SW MICRO (SW101)
9	ES-706492	⚠ SW VOLT CHANGE (U) (SW102)
10	ES-710584	SW PUSH BLK
11	EV-710533	R S-FIX 50KB (VR1,2)
12	EW-201515	⚠ AC CORD 2 CORES KP-560, LTSA-2F S (S)
13	EW-306427	⚠ AC CORD 2 CORES KP-211, VFF J(J)
14	EW-306428	⚠ AC CORD 2 CORES KP-205A, VFF J
15	EW-313882	⚠ AC CORD 2 CORES KP-419C, LTCE-2F E (E,V)
16	EW-313884	⚠ AC CORD 2 CORES GTBS-2F 24/0.20×2 B (B)
17	EW-328245	⚠ AC CORD 2 CORES KP-8/SPT-1 105C UC (C,A)
18	MB-710578	BELT
19	TP-710599	TONE ARM BLK
20	TP-710610	MAIN GEAR BLK

FINAL ASSEMBLY BLOCK



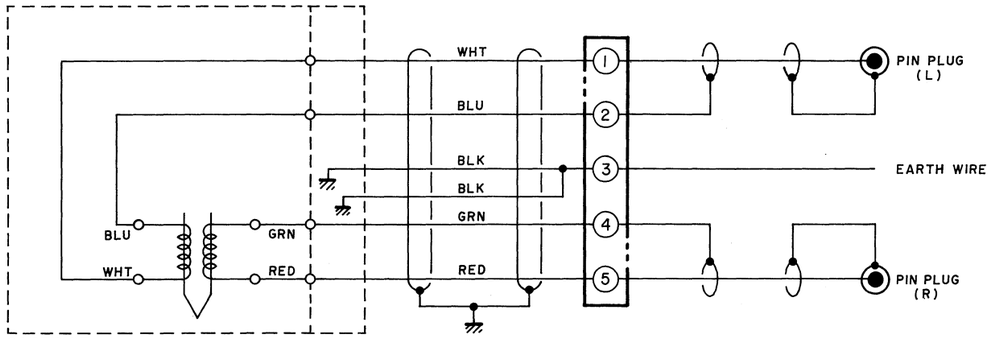
1. FINAL ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
1-1	ES-706464	⚠ SW MICRO (SW101)
1-2U	EW-306428	⚠ AC CORD 2 CORES KP-205A, VFF J (U)
1-2J	EW-306427	⚠ AC CORD 2 CORES KP-211, VFF J (J)
1-2C	EW-328245	⚠ AC CORD 2 CORES KP-8/SPT-1 105C UC (C,A)
1-2E	EW-313882	⚠ AC CORD 2 CORES KP-419C, LTCE-2F E (E,V)
1-2B	EW-313884	⚠ AC CORD 2 CORES GTBS-2F 24/0.20×2 B (B)
1-2S	EW-201515	⚠ AC CORD 2 CORES KP-560, LTSA-2F S (S)
1-D101	ED-284095	⚠ D SILICON SIVB10 100/0.6A
1-3U	BT-710565	⚠ TRANS POWER AP-M3(U) (PT101) (U,E,V,B,S)
1-3J	BT-710566	⚠ TRANS POWER AP-M3(J) (PT101)
1-3C	BT-710567	⚠ TRANS POWER AP-M3(C) (PT101)
1-3A	BT-710568	⚠ TRANS POWER AP-M3(A) (PT101)
1-C1U	EC-330307	⚠ C MMY V ECQUF 472M 250AC (U,E,V,B,S)
1-C1J	EC-320548	⚠ C CE V F 103Z 250AC (J)
1-C1C	EC-314688	⚠ C CE V FZ 103P 125AC (C,A)
1-4	BM-710569	MOTOR BLK DMR-173C-61 (M101)
1-5	EW-710620	AUDIO CODE VW-1SC
1-SW102	ES-706492	SW VOLT CHANGE (U)
1-6	SZ-710570	STRAIN RELIEF
1-7	TP-710571	HINGE (R)
1-8	TP-710573	HINGE (L)
1-9	ZS-710574	N6B30×060STL CMT
1-10	TP-710575	HOOK
1-10S	TP-711239	HOOK-S (AP-M3S)
1-11	SD-710576	DECORATION PLATE
1-11S	SD-711238	DECORATION PLATE-S (AP-M3S)
1-12	BC-710577	DUST COVER
1-13	MB-710578	BELT
1-14	TP-707625	TABLE SHEET
1-15	TP-710579	PLATTER
1-16	TP-710580	FOOT
1-17	ZS-710581	SCREW SPL
1-18	MB-710582	CUSHION RUBBER
1-19	ES-710584	SW PUSH BLK
1-20	ZS-710585	SCREW SPL
1-21	TP-710586	CS CAM
1-22	SB-710587	BUTTON REPEAT
1-22S	SB-711244	BUTTON REPEAT-S (AP-M3S)
1-23	SB-710588	BUTTON CUT
1-23S	SB-711243	BUTTON CUT-S (AP-M3S)
1-24	SB-710589	BUTTON START
1-24S	SB-711242	BUTTON START-S (AP-M3S)
1-25	TP-710590	GUIDE CAM
1-26	SB-710591	BUTTON
1-26S	SB-711241	BUTTON-S
1-27	TP-710592	GUIDE HOLDER
1-28	TP-710593	GUIDE (CUE)
1-29	SK-710595	KNOB (CUE)
1-29S	SK-711240	KNOB (CUE)-S (AP-M3S)
1-30	ZG-710596	SP HINGE
1-31	ZW-710597	CS TYPE CLIP CS-4
1-32	TP-710598	SELECTOR PLATE
1-33	TP-710599	TONE ARM BLK
1-34	TP-710600	PLATE ELEVATION
1-35	ZS-710601	SCREW SPL
1-36	TP-710602	POTATE STAND
1-37	TP-710603	POTATE PLATE
1-38	ZW-301151	CS TYPE CLIP CS-2
1-39	ZS-710604	SCREW SPL
1-40	ZS-710606	SCREW SPL
1-41	ML-710607	LEVER SW
1-42	ZS-710608	SCREW SPL
1-43	ML-710609	LEVER CHANGE
1-44	TP-710610	MAIN GEAR BLK
1-45	ZS-710611	SCREW SPL
1-46	ML-710612	LEVER REPEAT
1-47	ML-710613	LEVER START
1-48	ML-710614	LEVER SWITCH
1-49	ML-710615	LEVER CLUTCH
1-50	TP-710617	TT SHAFT BLK
1-51	SP-710618	REAR COVER
1-51S	SP-711237	REAR COVER-S (AP-M3S)
1-52	BC-710619	CABINET
1-52S	BC-711234	CABINET-S (AP-M3S)
		MOTOR CONTROL P.C BOARD
1-IC1	EI-710532	IC μPC1003C2
1-VR1	EV-710533	R S-FIX 50KB
1-VR2	EV-710533	R S-FIX 50KB

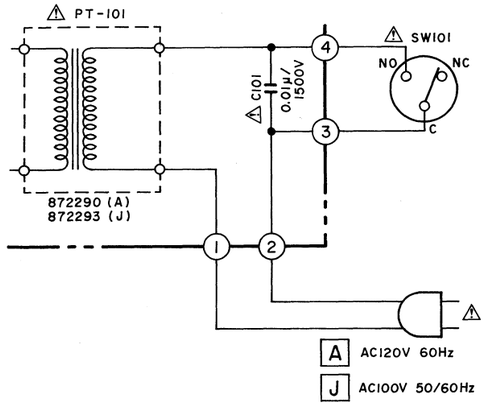
INDEX

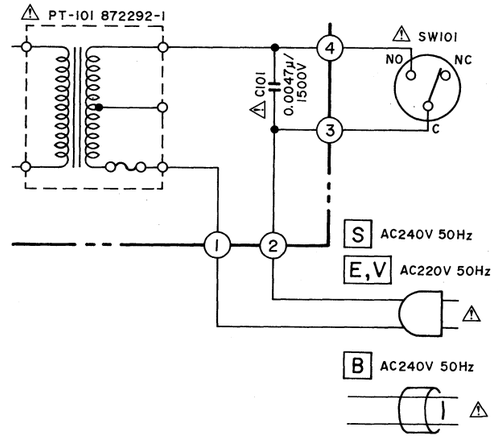
SECTIN 3

SCHEMATIC DIAGRAM

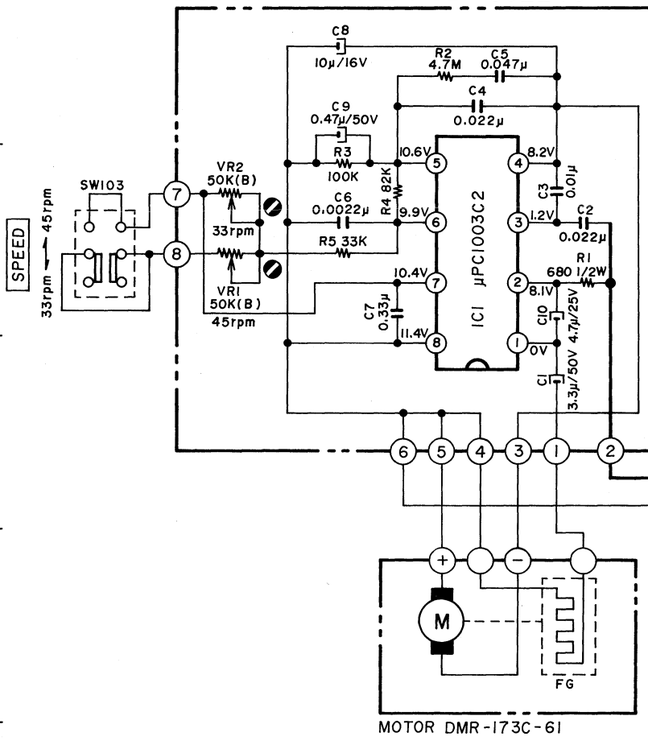


CARTRIGE
REPLACEMENT STYLUS RS-3



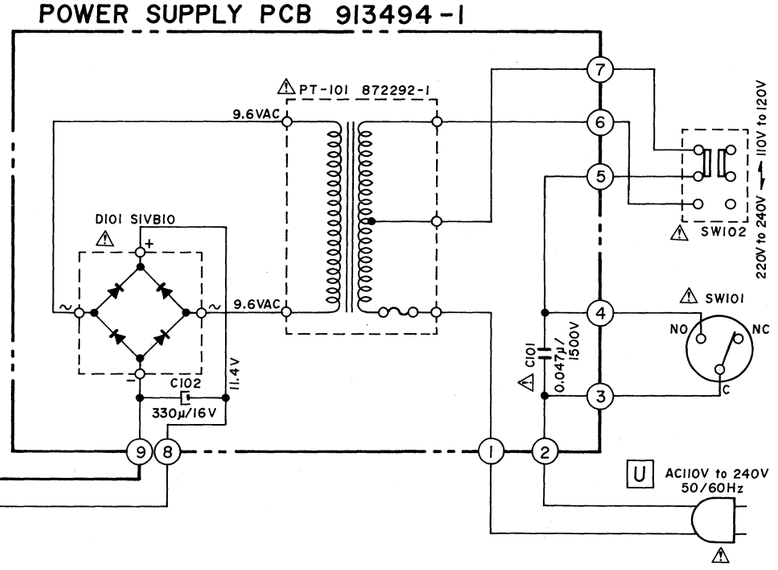


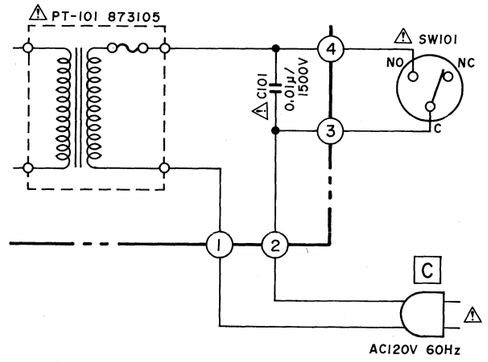
MOTOR CONTROL PCB 632246



MOTOR DMR-173C-61

POWER SUPPLY PCB 913494-1





NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50 WV(J)

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

AP-M3
SCHEMATIC DIAGRAM
NO. 830214A